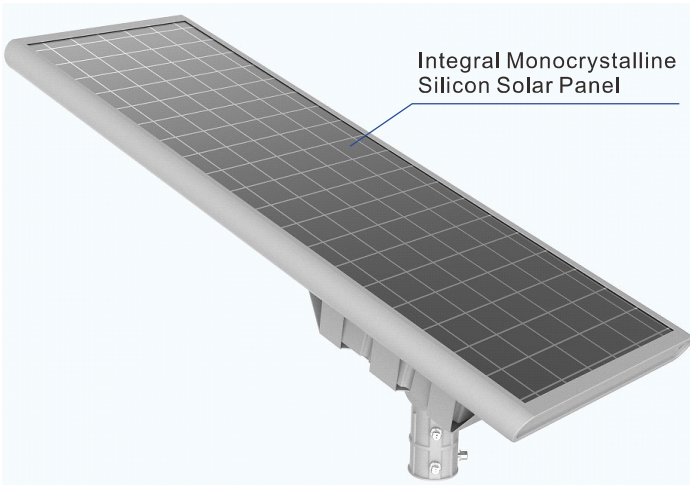
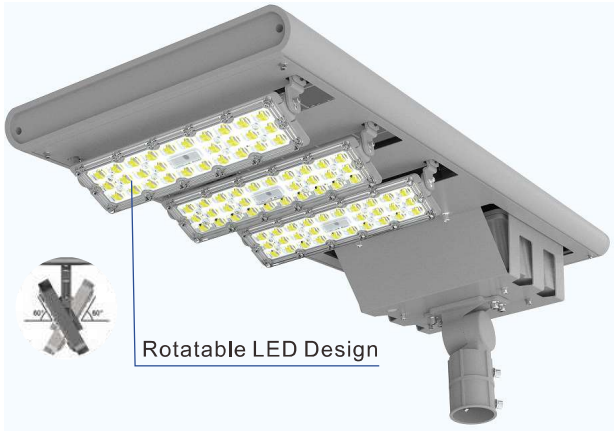
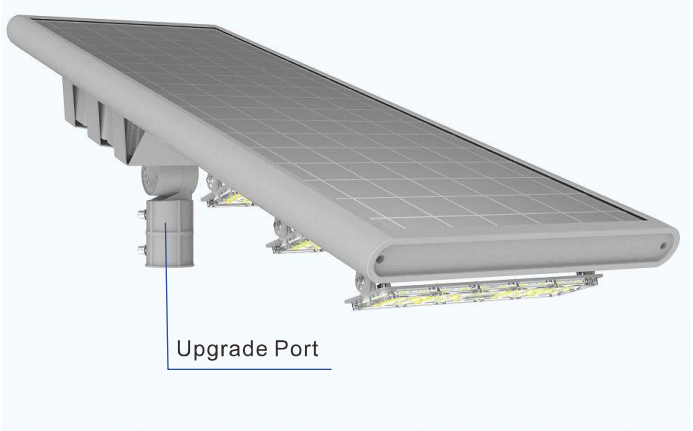
ST-S Series

LED Solar Street Light







Features

- ST-S solar street light features all in one design function, low profile design, with PIR/ microwave motion sensor and smart controller all built in.
- Bilateral Solar Panel design. Suitable for remote region, non-electricity supply zone.
- Deep cycle battery, charge and discharge over 2000 times.
- Operating time: operate 2~3 rainy days under intelligent model.
- Power range: from 20W to 80W.
- Rotable LED module, ensuring best solar panel angle to the sun.
- Ultra-high light efficiency up to180 lm/W.
- IP65 protection degree, suitable for wet location.

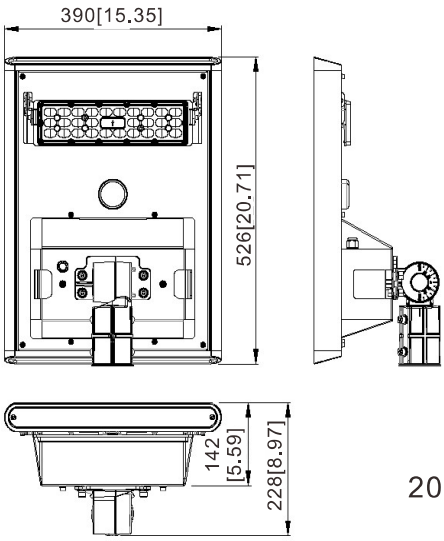
Standard Materials

- Radiator: 1060 aluminum
- Lamp body accessories: 6063 aluminum/ 1060 aluminum
- Bracket: SPCC iron
- Lens: PC
- Battery: Lithium iron phosphate
- Photovoltaic panel: Monocrystalline silicon

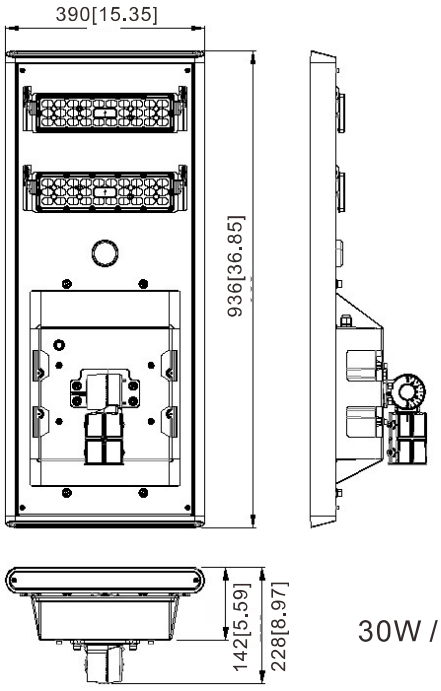
Specifications

Electrical Data						
Model	ST-S20W	ST-S30W	ST-S40W	ST-S50W	ST-S60W	ST-S80W
Power	20W	30W	40W	50W	60W	80W
Control Option	Photocell sensor, Timing, dimming, intelligent power saving, microwave sensor or PIR sensor.					
Work Mode	2H-100%; 4H-Detected: 60%, None: 20%; 6H-Detected: 40%, None: 10%					
Photometric Data						
LED Manufacturer	3030 optional					
Lens	Polycarbonate					
Efficacy (lm/W, Std. Dev. ±3%)@CCT=5700K, CRI>70Ra	180lm/W	180lm/W	180lm/W	180lm/W	180lm/W	180lm/W
Luminous flux (lm, Std. Dev. ±3%)@CCT=5700K, CRI>70Ra	3600lm	5400lm	7200lm	9000lm	10800lm	14400lm
ULOR	Luminaire inclination:± 45°					
CCT	3000K, 4000K, 5000K, 5700K, 6500K					
CRI	70Ra (standard) / 80Ra (optional); 70Ra matches efficacy of 180lm/W					
Beam angle	Type 2, Type 3, Type 4 optional					
IP Rating	IP65, according to standard EN 60529					
Housing	6063 aluminum					
Surface treatment	Anti-UV thermosetting polyester / 80 micron epoxy primer + Anti-UV thermosetting polyester (for extremely corrosive environments).					
Painting	Gray, Custom request					
Mounting	Post Top					
EPA	0.24m² (2.58ft²)	0.43m² (4.62ft²)	0.43m² (4.62ft²)	0.51m² (5.48ft²)	0.51m² (5.48ft²)	0.61m² (6.56ft²)
Solar Panel Data						
Photovoltaic Panel	Single side monocrystalline solar panel					
Solar Panel	40W	60W	60W	70W	70W	90W
Li-ion Battery	153.6WH	230.4WH	230.4WH	230.4WH	384WH	537.6WH
Charing Time	3.84Hrs	3.84Hrs	3.84Hrs	4.38Hrs	5.48Hrs	5.97Hrs
Run Time(@Full Power)	7.68hrs	7.68hrs	5.76hrs	6.14Hrs	6.4Hrs	6.72Hrs
Ambient Temperature	-10°C to 50°C (14°F to 122°F)					
Control System	MPPT/PWM optional					
Maximum Autonomy	Operate 2~3 rainy days under intelligent model.					
Lifespan	140000hrs-L70 / 88000hrs-L80 @Ta 25°C					
Warranty	3 years (Warranty extension up to 5 years on request)					
Certification	CE/RoHs					
Product Size	526x290x142mm	936x290x142mm	936x290x142mm	1106x290x142mm	1106x290x142mm	1316x290x142mm
Export Carton Size	590x460x210mm	1000x460x210mm	1000x460x210mm	1170x460x210mm	1170x460x210mm	1380x290x142mm

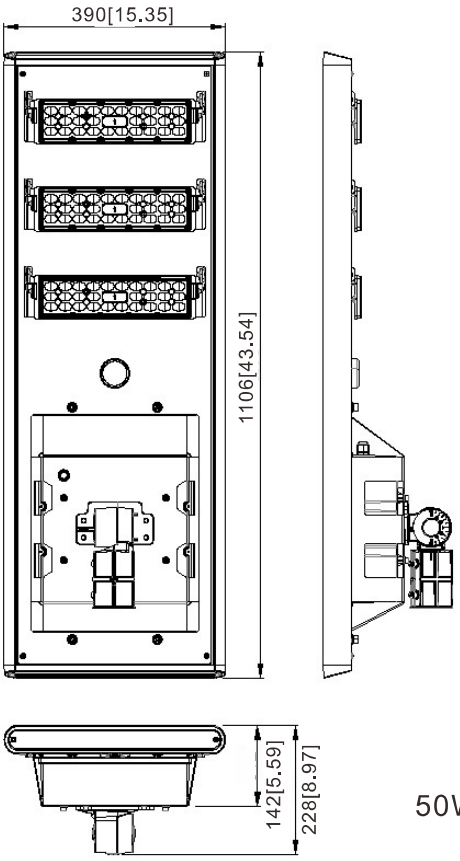
Dimension: Unit: mm[inch]



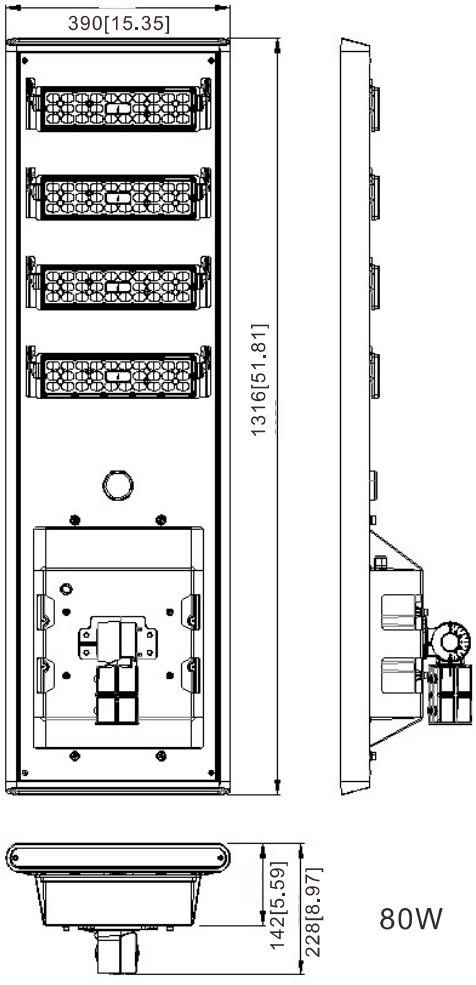
20W



30W / 40W



50W / 60W



80W

Catalog Number Logic:

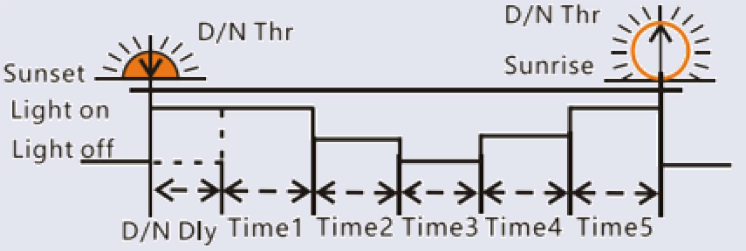
ST-SxxW-PxxDZ

1 2 3 4 5 6 7

1. Product Category
   - ST: Street light
2. Product Code
   - S: Solar energy
3. Wattage
   - 20W; 30W; 40W; 50W; 60W; 80W
4. Control
   - P: PIR infrared induction
5. CCT
   - 30: 3000K
     40: 4000K
     50: 5000K
     57: 5700K
     65: 6500K
6. Beam angle
   - T2: Type 2
     T3: Type 3
     T4: Type 4
7. Optional

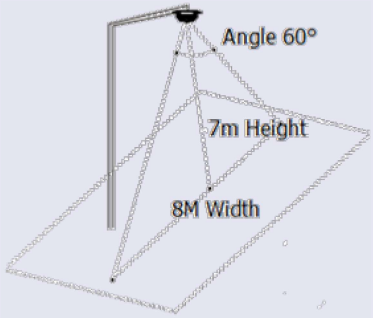
Autonomy Control:

5-stage Night Mode:



* The sensor function is only available at Time 3 and Tine 4.
The fixtures can be set with 5 stages timmer dimming by the remote control.

PIR Sensor Detect Areas:



Factory Default Setting:

1. With sufficient natural light, the light keeps charging.

2. 1st 2hours from light switches on, the light keeps 100% brightness when presence is detected.

3. when no presence is detected, the lights dim to 30% brightness.

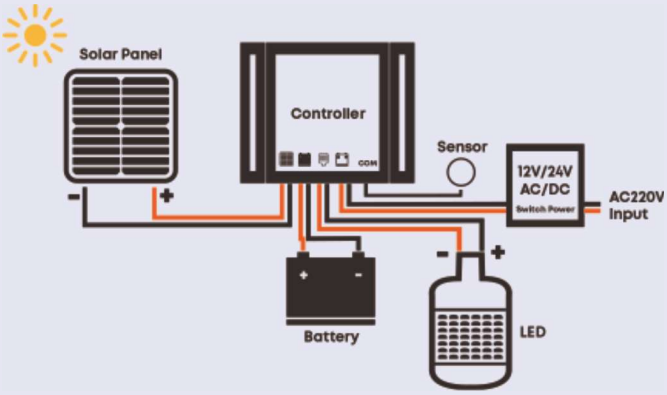
4. The light keeps 60% brightness when presence is detected from 4th hours after light switches on.

5. When no presence is detected, the lights dim to 20% brightness.

6. The light keeps 40% brightness when presence is detected from 6th hours after light switches on.

7. When no presence is detected, the lights dim to 10% brightness until the sunrise.

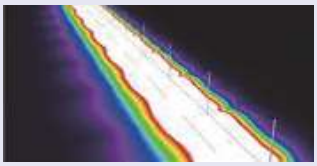
Working Way:



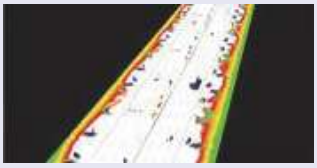
The solar panel receives solar radiation energy and converts it into electricity,which is stored in the battery by the photovoltaic controller. At night, when the illumination gradually decreases to about 10 LUX and the solar panel voltage is 5V, the charge and discharge controller detects this voltage value, and controls the battery to discharge for the LEDs to complete the process of daytime charging and evening discharge.

Photometrics Design

Planning and analyzing of street lights can be done by using lighting design software, which allows lighting simulations. It uses rendering, the process of generating an image from a model, by means of computer programs resulting in different tools for measuring the simulate light levels.

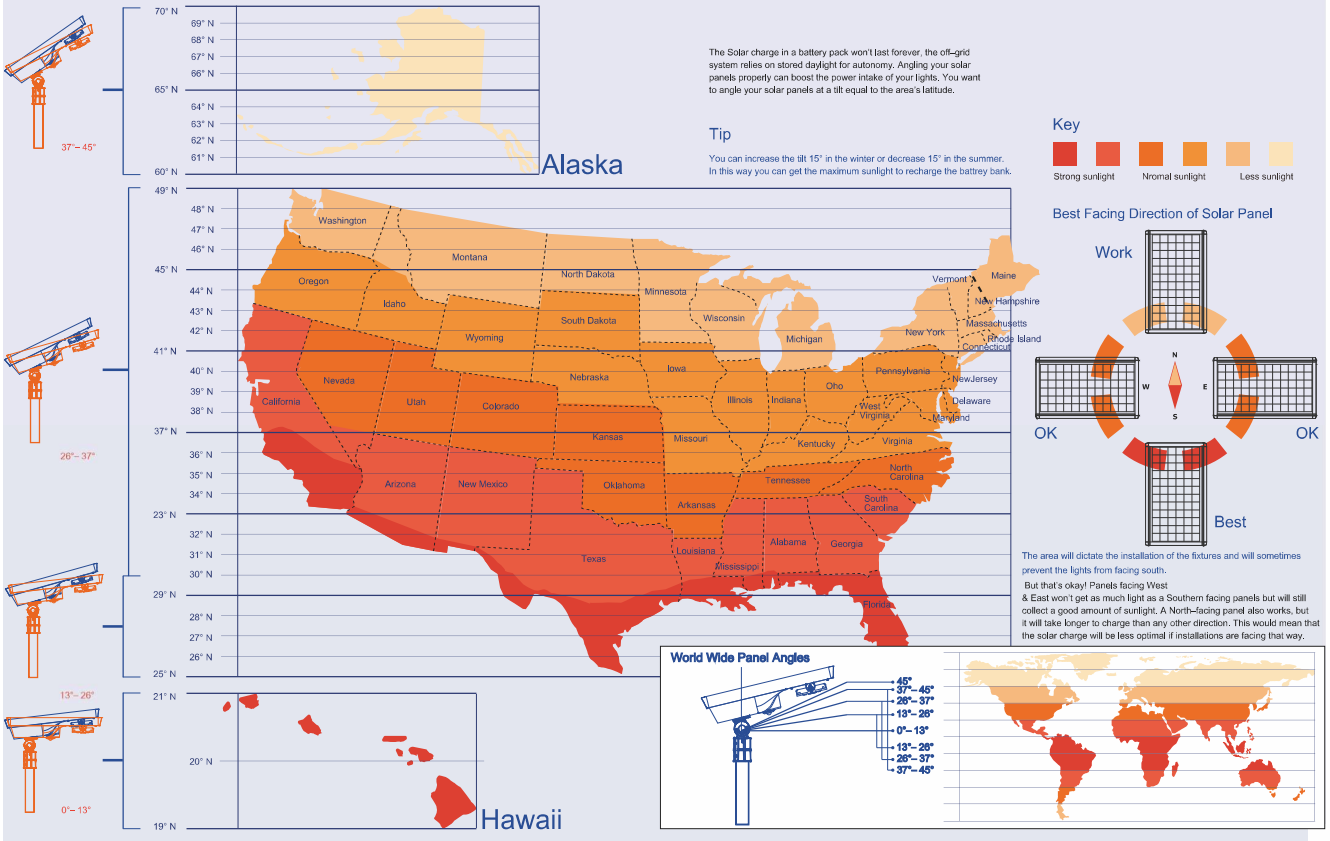


Example of urban branch road

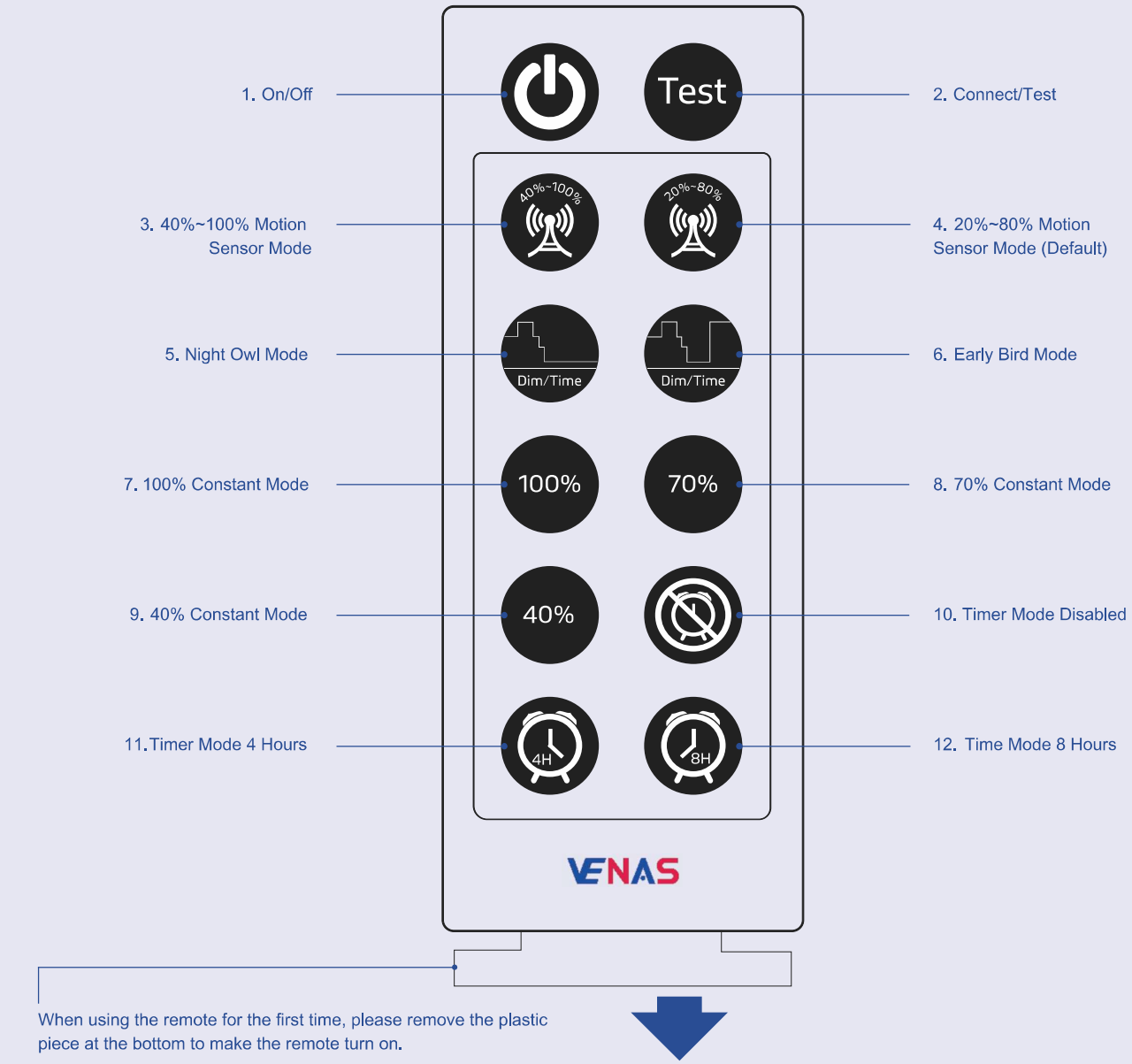


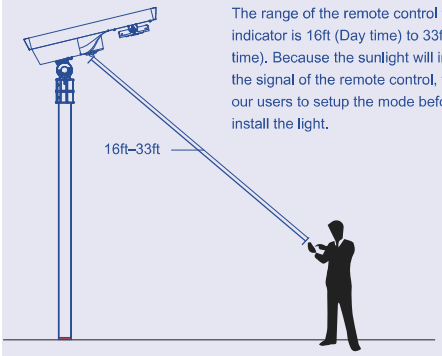
Example of urban branch road

Panel Angle:



Remote Control Guide:





The range of the remote control to the indicator is 16ft (Day time) to 33ft (Night time). Because the sunlight will impact the signal of the remote control, we suggest our users to setup the mode before they install the light.

1. On/Off

When o ffis selected, the light will stop working. Solar panel will not charge the battery and the battery will not supply electricity to the light.

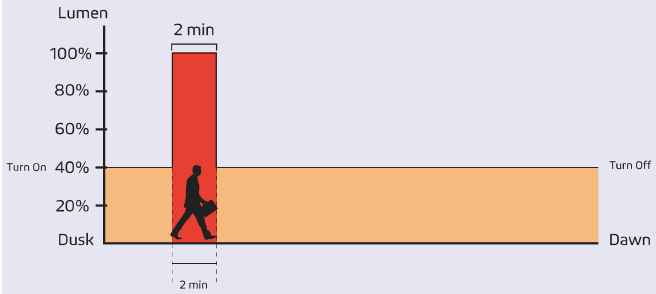
2. Connect/Test

Remote control device can be connected with any lighting fixture, one at a time. To connect, press the button once. It also functions as a test button. To test, press the “Test” button once, the red light will indicate the fixture is charging, green light indicates that the fixture is operating. Testing lasts for 10 seconds, then goes back to the mode previously in use.

Remote Control Guide

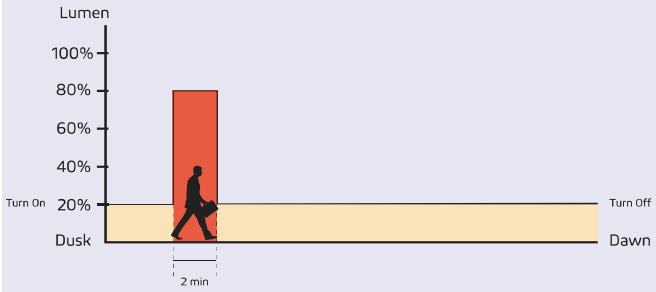
3. 40%~100% Motion Sensor Mode

Constant 40% brightness (turn on at dusk, turn o ffat dawn);
100% brightness turns on for 2 minutes when motion detected.



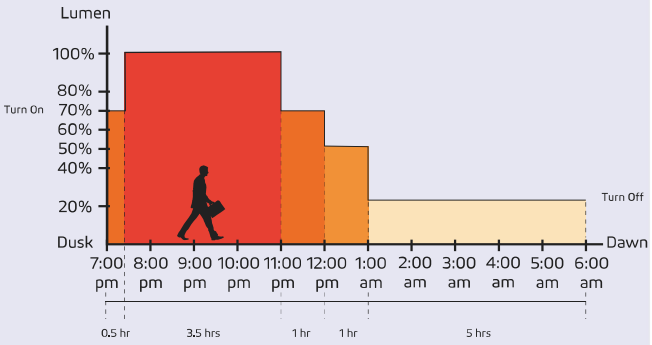
4. 20%~80% Motion Sensor Mode (Default)

Constant 20% brightness (turn on at dusk, turn o ffat dawn);
80% brightness turns on for 2 minutes when motion detected.



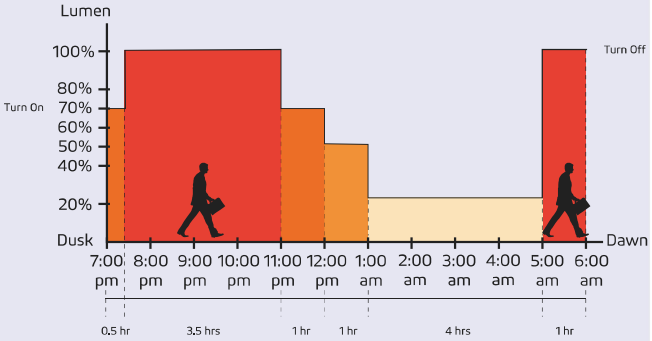
5. Night Owl Mode

Changes as natural light decreases/increases (turn on at dusk); 70% brightness for 0.5 hour, 100% brightness for 3.5 hours, 70% brightness for 1 hour, 50% brightness for 1 hour, 20% brightness for 5 hours (turn off at dawn).



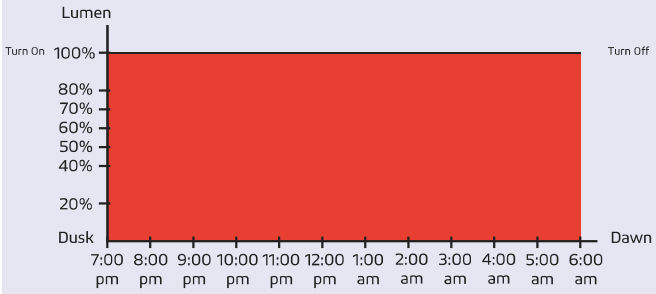
6. Early Bird Mode

Changes as natural light decreases/increases with increased brightness near dawn for early risers (turn on at dusk); 70% brightness for 0.5 hour, 100% brightness for 3.5 hours, 70% brightness for 1 hour, 50% brightness for 1 hour, 20% brightness for 4 hours, 100% brightness for 1 hour (turn off at dawn).



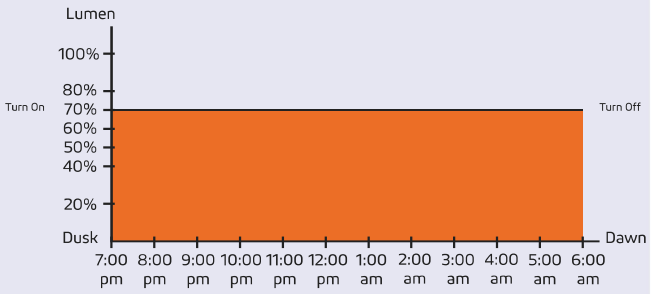
7. 100% Constant Mode

100% brightness from dusk to dawn.



8. 70% Constant Mode

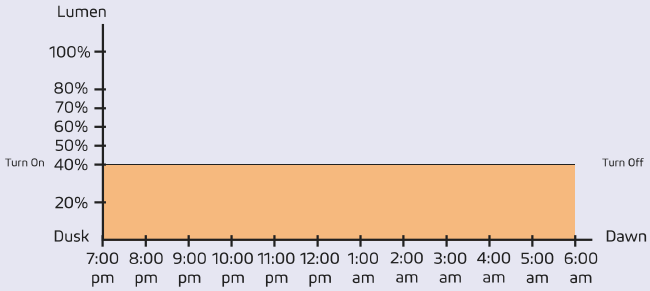
70% brightness from dusk to dawn.



Remote Control Guide

9. 40% Constant Mode

40% brightness from dusk to dawn.

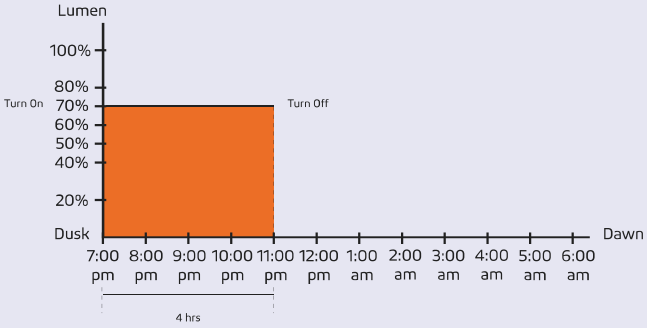


10. Timer Mode Disabled

Press this button to turn off Timer Mode; settings go back to before Timer Mode was last activated.

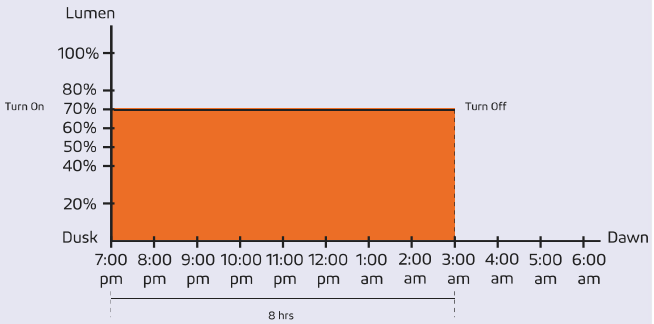
11. Timer Mode 4 Hours

This is an additional mode which can work with any other modes. For example: press this button at any time after you turn on 70% Constant Mode, if the light turns on at 7pm at dusk, it will turn o ffat 11pm. It will repeat the same schedule hereafter until it is canceled by pressing Timer Disabled.



12. Time Mode 8 Hours

This is an additional mode which can work with any other modes. For example: press this button at any time after you turn on 70% Con stant Mode , if the light turns on at 7pm at dusk, it will turn o ffat 3am. It will repeat the same schedule hereafter until it is canceled by pressing Timer Disabled.

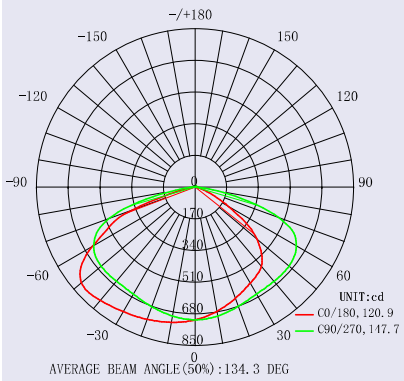


Important

Dust and dawn time may be diffrent in other locations and seasons. The sensors of our products will follow the light patterns of where it is installed. The time period shown in the chart above is just an example to help you understand the different lighting modes only.

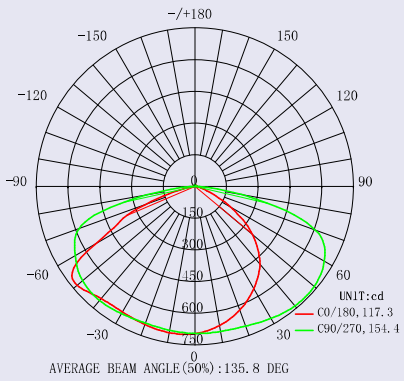
Photometry:

Type 2



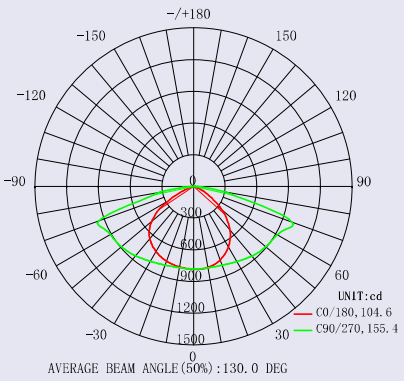
AVERAGE BEAM ANGLE(50%):134.3 DEG

Type 3



AVERAGE BEAM ANGLE(50%):135.8 DEG

Type 4



AVERAGE BEAM ANGLE(50%):130.0 DEG

IOT Management, Intelligent Lighting:

Venas perfectly combines traditional solar street lighting architecture, Internet of things, and wireless communication technology to achieve monitoring and management of remote background data, real-time understanding the normal working status of each component of solar energy (street lights, photovoltaic panels, batteries, controllers), which allows to know the end customer's product usage that is thousands of miles away without leaving home, or to manage the opening and closing of street lights and the adjustment of bright spot power in a timely manner.

Remote monitoring Real time monitoring

ST-Z series with wireless communication function, Through the intelligent management system of solar street lamp and wireless module, have remote monitoring and real-time monitoring.

Automatic fault alarm

Real time monitoring of solar panel voltage, current, power, battery charging and discharging current, voltage, load working state, controller working state data and fault automatic alarm.

Remote control

Support remote switch on and o ffdimmer and battery, load parameter modification.

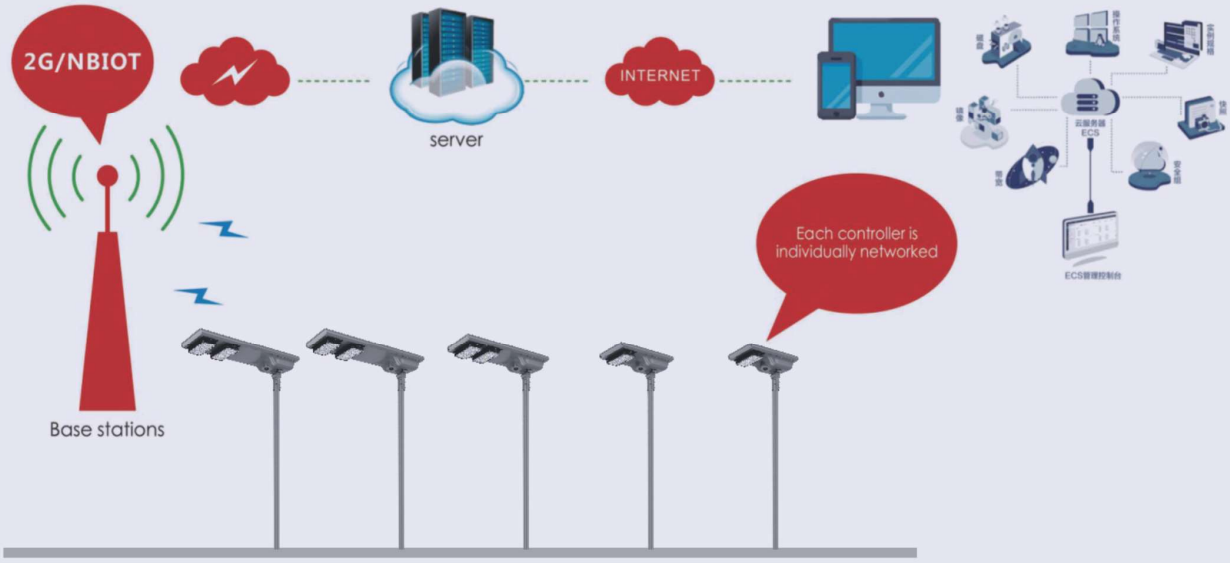
Fault tracking and precise positioning

Multi peak PWM technology, suitable for partial shading or partial damage of photo voltaic cells, and the tracking efficiency is more than99%.

Map location

Using GIS maps, with geographic display capabilities.

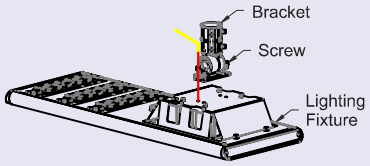
The Internet of Things solar street light management system is mainly composed of a street light component + a centralized controller + a single light controller + a smart cloud platform. The centralized controller and the single light controller aggregate the data collected by the single light via the GPRS/NB-IOT wireless communication network. The centralized controller uploads data to the system cloud platform through GPRS data flow, providing data dependence for mobile phone and computer terminal access.



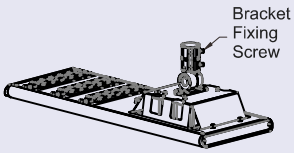
Performance Comparison Between Smart IOT Solar LED Street Light and Traditional Street Light:

Solar LED street light controller type	PWM+IOT controller	Instruction
Light decay detecting	√	Automatic light decay detection and adjustement
Charging in rainy days	√	PWM charge 3 rainy days is equivalent to a sunny day
Battery management	√	Battery lifespan management
Remote monitoring	√	Remotely monitor the status of each street light in real time
Optimize configuration	√	Through data analysis, complete the optimal configuration of solar panels and batteries in different regions
Fault alarm	√	Automatically detect system failures and alert to mobile phones or computers
Intelligent analysis	√	Automatically collect the detailed data for per light at per night, and statistical report analysis
Artificial intelligence	√	Big data collection and analysis through the system platform, complete the intelligent operation of street light and achieve stable lighting throughout the year

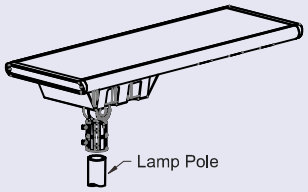
Installation Procedure:



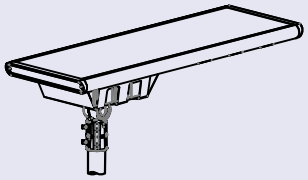
1. Align the bracket with the installation hole.



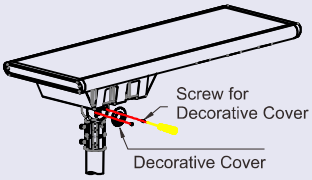
2.Tighten the mounting screws (4 PCS) and loosen the bracket-fixing screws.



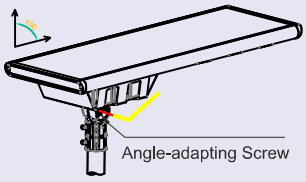
3.Stick the lamp into the lamp pole.



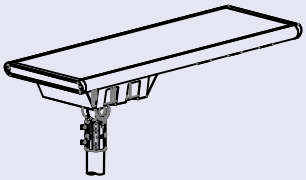
4. Tighten the bracket-fixing screws (4 PCS).



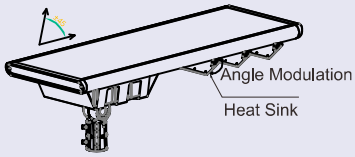
5. Detach the decorative cover with a screw driver.



6. Loosen the angle-adapting screws and adjust the fixture to a desirable angle (±90°).



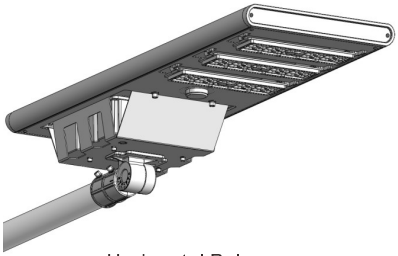
7. Tighten the angle-adapting screws and put the decorative cover on.



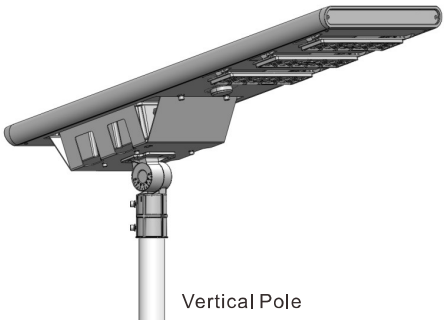
8. Loosen the screws on heat sink to adjust its angle(±45°). When this is done, tighten them up.

Installation effect drawings:

Diameters of pole: 42mm / 60mm / 76mm



Horizontal Pole



Vertical Pole

Packing Included:

- Instruction Guide *1
- LED Fixture *1
- Bracket *1
- Remote Control *1